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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/816,260 | 03/31/2004 | Mark S. Isenberger | 42P17808 | 9840 |

8791 7590 04/20/2006

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EXAMINER

NGUYEN, VIET Q

ART UNIT PAPER NUMBER

2827

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/816,260

Applicant(s)

ISENBERGER ET AL.

Examiner

Viet Q. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Response filed on 2/27/2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-32 is/are allowed.
- 6) ☒ Claim(s) 1,8,9,11,12 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 2-7,10,13,19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims **1-32** are pending for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims **1, 8-9, 11-12, 14-18** are rejected under 35 U.S.C. 102(b) as being anticipated by **Ogden et al (US 4,731,754)**.

Ogden et al (see background, Fig. 3 & descriptions on cols. 3-4) has already acknowledged the use of PVDF (polyvinylidene-fluoride) material as polymer ferroelectric device for forming a memory device having two storing states programmable under influence of an externally applied electric field, polarization, and changing temperatures of such material caused by the external heating source. For example, col. 4 (lines 35-56) described in detail how the "individual spots can be selected erased and/or written heated by local heating of a heating source (laser beam)". Specifically, it taught that writing can be done with the presence of an electric field with temperature below Curie point, while erase can be done with an absence of electric field and heating above the Curie temperature. Furthermore, Fig. 3 shows the

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use of a heater source (laser beam generator 17) as the claimed "heater" for such heating step.

Regarding claim 11, the steps of "maintaining" and "cooling" are inherently and discussed on col. 6 (lines 56-61) when the heating source is scanning from one programmed spot/cell to the next.

Regarding claim 12, col. 6 (lines 25-43) discusses the writing process with heating first followed by exposing to electric field after heating and/or cooling.

4. Other claims contain allowable subject matter because prior arts fail to teach and/or fairly suggest the following features:


- Claims **2-3, 13** recite the use of an "on-chip" temperature sensor for detecting temperature changes;
- Claims **4-7** recite the use of a "metal array coupled with a current source" as heating source, etc.;
- Claim **10** recites use of intermediate, dielectric layer for such memory cell;
- Claims **19-20** recite the specific timing requirements for heating process;
- Claims **21-32** are allowable for reciting a method for "annealing, with an **on-chip heater**, a polymer ferroelectric memory device".

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viet Q. Nguyen whose telephone number is (571) 272-1788. The examiner can normally be reached on 7am-6pm (EST).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


V. Nguyen
4/13/2006



**VIET Q. NGUYEN
PRIMARY EXAMINER**